REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	NC	BR 2H7	10	164

Limit of work 273+75

PI # 42

S 59° 55' 56" W

272+67.04 P.C.S.

274+67.04 P.S.T.

$\theta_s = 18°$ $L_s = 200'$

276+43.48 P.S.

276+43.46 P.S.C.

$\theta_s = 23°$ $L_s = 200'$

278+40.22 P.C.S.

279+40.22 P.S.T.

$\theta_s = 20°42'$ $L_s = 180'$

282+26.35 P.S.

283+06.35 P.S.C.

$\theta_s = 20°42'$ $L_s = 180'$

284+24.32 P.C.S.

286+24.32 P.S.T.

$\theta_s = 20°42'$ $L_s = 180'$

288+24.38 P.S.

288+14.38 P.S.C.

$\theta_s = 14°24'$ $L_s = 180'$

289+90.53 P.C.S.

291+90.53 P.S.T.

$\theta_s = 16°$ $L_s = 200$

292+02.60 P.S.

294+02.60 P.S.C.

$\theta_s = 18°$ $L_s = 200'$

296+86.23 P.C.C.

$\theta_s = 18°$ $L_s = 200'$

298+85.23 Bk

299+39.53 Ahd PST

PI # 46

S 3° 45' 46" W

PI # 43

PI # 44

LINN COVE VIADUCT

PI # 45

PARKWAY BOUNDARY

N 865,590

E 1,169,000

BEGIN PROJECT 276+48.50

END PROJECT 289+51.50

Limit of work 291+50

GENERAL NOTES:

1. The horizontal control for this project is based on North Carolina State plane coordinate grid system (Lambert)
2. The vertical control for this project is based on U.S. Department of Interior, Geological Survey, Sea level datum of 1929.

		PI #42	PI #43	PI #44	PI #45	PI #46
Δ	=	87°52' Rt.	65° 57' Lt.	75° 26' Rt.	58° 35' Lt.	87° 3' Rt.
Δ_c	=	47°52	22° 15'	34° 2'	28° 11'	51° 3'
D_c	=	18°	23°	23°	16°	18°
R_c	=	318.31'	249.11'	249.11'	358.10'	318.31'
L_c	=	265.93'	96.74'	147.97'	176.15'	283.63'
T_B	=	390.30'	264.02'	286.43'	233.84'	406.98'
T_A	=	390.30'	256.11'	286.43'	302.20'	406.98'
e	=	0.10'/Ft.	0.10'/Ft.	0.10'/Ft.	0.10'/Ft.	0.10'/Ft.
w		5.0'	5.0'	5.0'	5.0'	5.0'

N = 865470.609

E = 1169594.840

PLAN

PROFILE

Begin excavation 273+75

-2.44%

F 1½ : 1 Lt.
C ½ : 1 Rt.
W/10' offset

Begin grading and base 276+00

276+30
18"x 20' P.C.
1-Type 1, 2 or 3 inlet-Rt.
1-Type B, inlet-Lt.

V.P.I. EL. 4394.85

500' V.C.

-1.90%

290+05 Lt
18"x 40' P.C.
1-Type B, inlet

EL. 4376.80

V.P.I. EL. 4367.30

End grading & base 291+00

900' V.C.

-5.33%

Limit of surface treatment

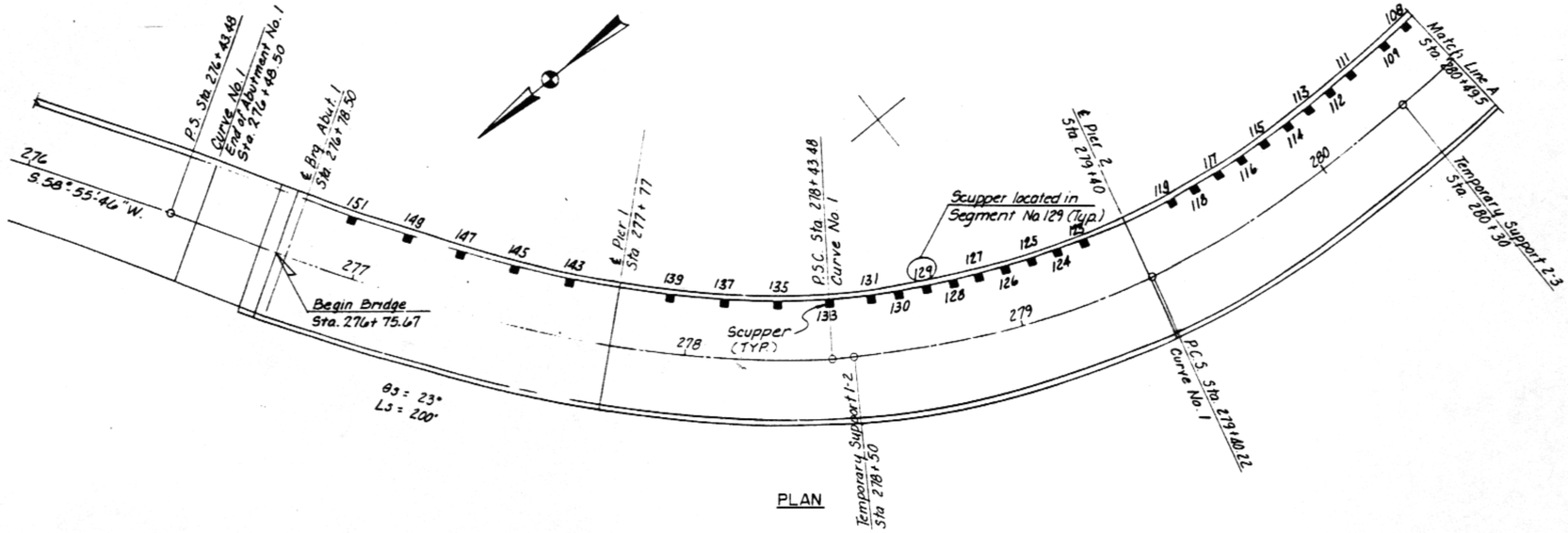
298+86.23 Bk

299+39.53 Ahd.

EQUATION

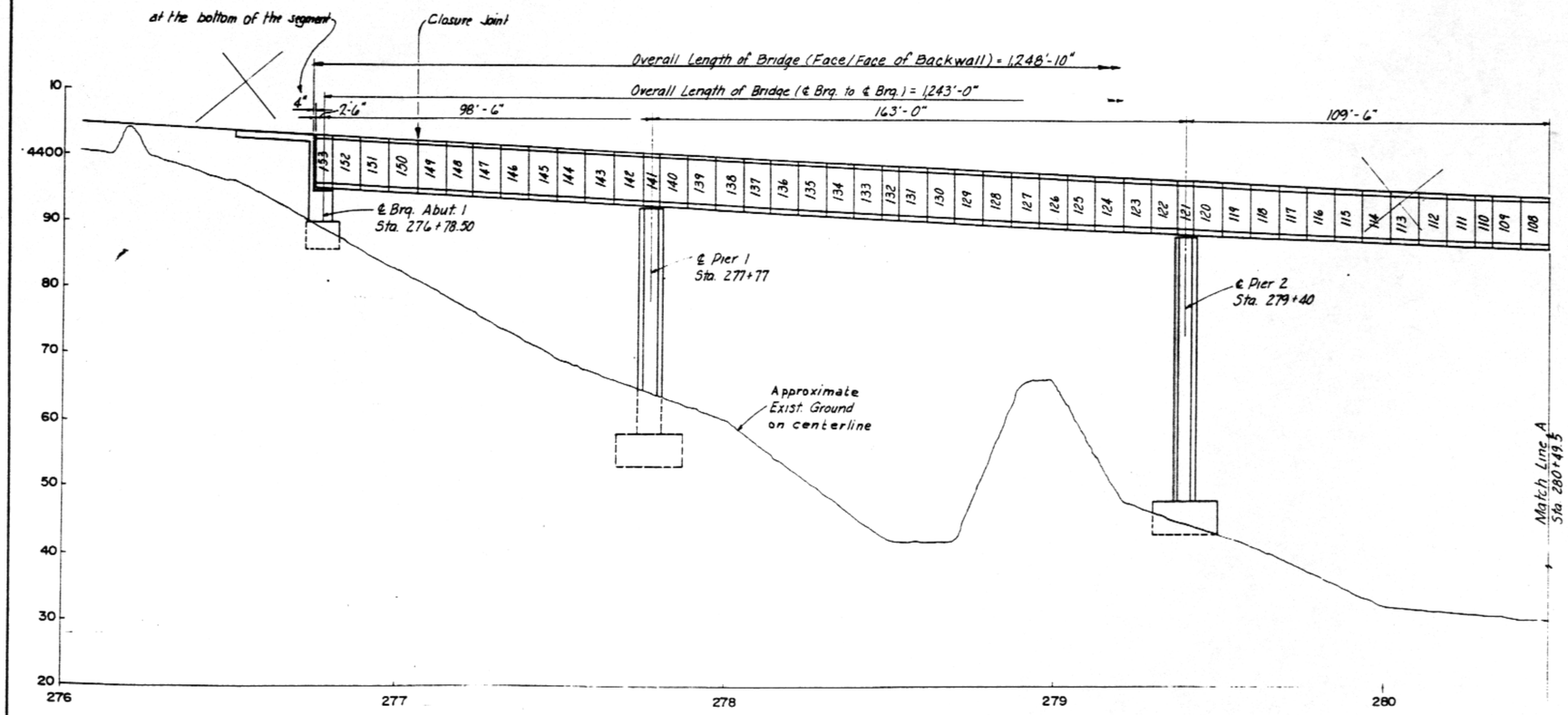
271 2 3 4 275 6 7 8 9 280 1 2 3 4 285 6 7 8 9 290 1 2 3 4 295 6 7 8 9 300

REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	N.C.	BR2H7	19	164



PLAN

Scale : 1" = 20'-0"

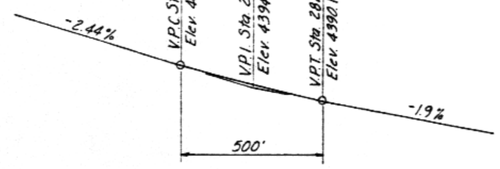


ELEVATION

Scale : 1" = 20'-0" Horiz.
1" = 10'-0" Vert.

Note: All dimensions shown on the "Elevations" are measured horizontally, along curve, between ℄ bearing along the vertical projection of the ℄ bridge

Note: All horizontal and Vertical geometry applies to the centerline of bridge at the top of the bituminous overlay (2" above finished concrete).



VERTICAL CURVE DATA

HORIZONTAL SPIRAL CURVE DATA @ ℄ BRIDGE

	CURVE No.1	CURVE No.2	CURVE No.3
Δ	65° 57' Lt.	75° 26' Rt.	58° 35' Lt
Δc	22° 15'	34° 02'	28° 11'
Dc	23°	23°	16°
Rc	249.11'	249.11'	358.10'
Lc	96.74'	147.97'	176.15'
T_B	264.02'	286.43'	293.84'
T_A	256.11'	286.43'	302.20'
e	0.10'/Ft.	0.10'/Ft.	0.10'/Ft.

PLAN AND ELEVATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

LINN COVE VIADUCT

BARRETT DAFFIN & FIGG / EUROPE ETUDES
Special Consultant: JEAN M. MULLER — TALLAHASSEE, FL

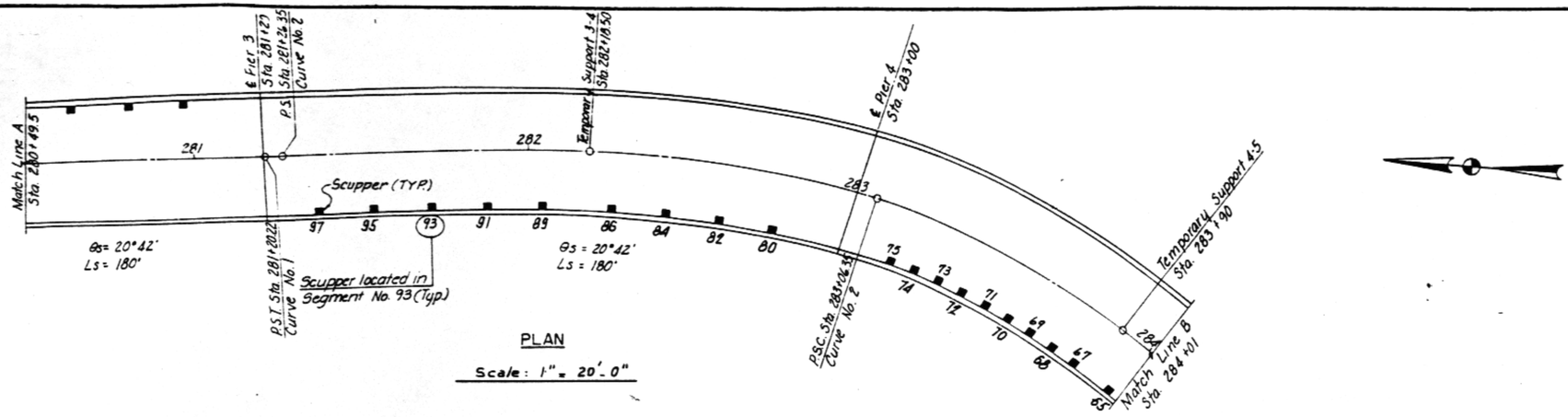
REVISIONS				
Dates	Descriptions		Names	Dates
		Designed by	E.B	4/78
		Checked by	Y.G	7/78
		Quantities by		
		Checked by		
		Supervised by		

APPROVED BY

Drawing No. 3

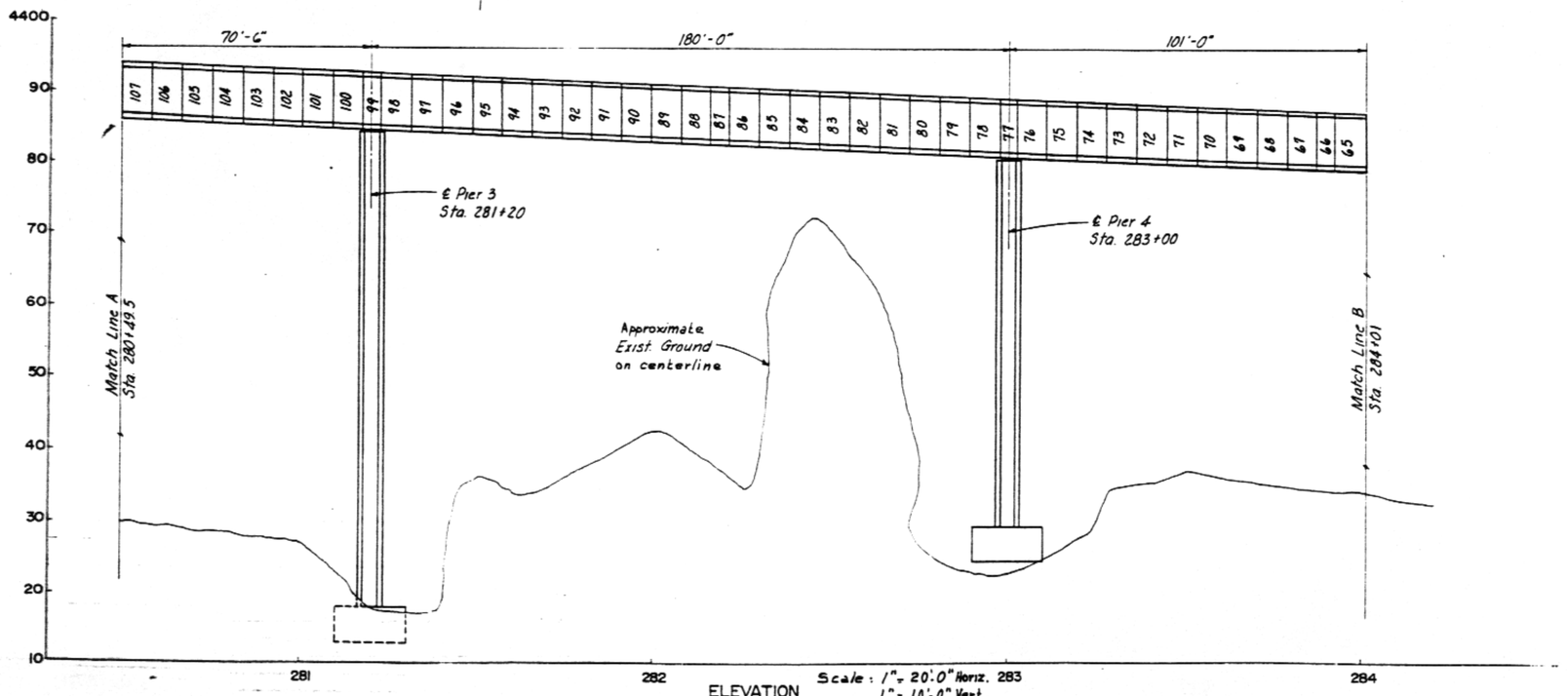
Project No.

REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	N.C.	BRZH7	20	164



PLAN

Scale: 1" = 20'-0"



ELEVATION Scale: 1" = 20'-0" Horiz. 1" = 10'-0" Vert.

PLAN AND ELEVATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

LINN COVE VIADUCT

BARRETT DAFFIN & FIGG / EUROPE ETUDES

Special Consultant: JEAN M. MULLER — TALLAHASSEE, FL

REVISIONS				
Date	Description			

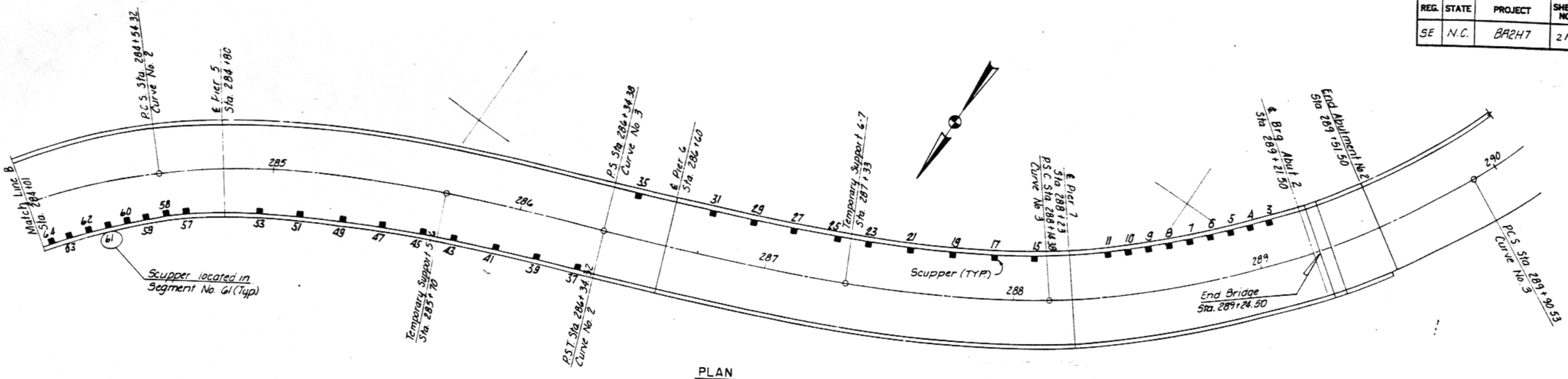
	Names	Dates
Designed by	B.E.B	4/78
Checked by	Y.G.	7/78
Quantities by		
Checked by		
Supervised by	D.C.	

APPROVED BY

Drawing No. 4

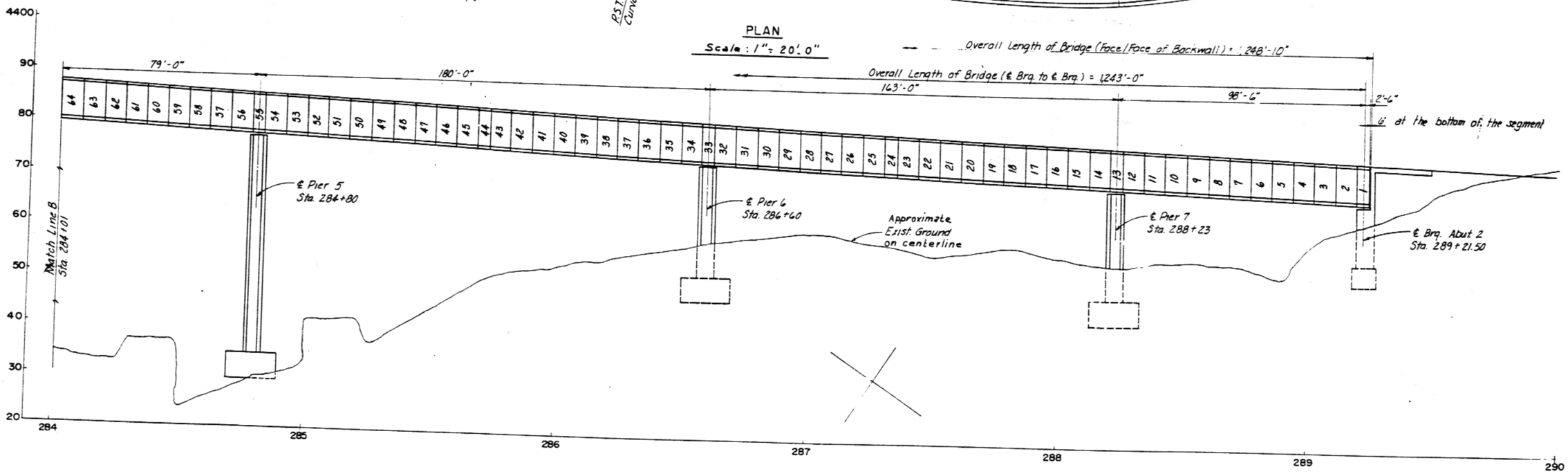
Project No.

REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	N.C.	BA2H7	21	164



PLAN

Scale : 1" = 20'-0"



ELEVATION

Scale: 1" = 20'-0" Horiz.
1" = 10'-0" Vert.

PLAN AND ELEVATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

LINN COVE VIADUCT

BARRETT DAFFIN & FIGG / EUROPE ETUDES

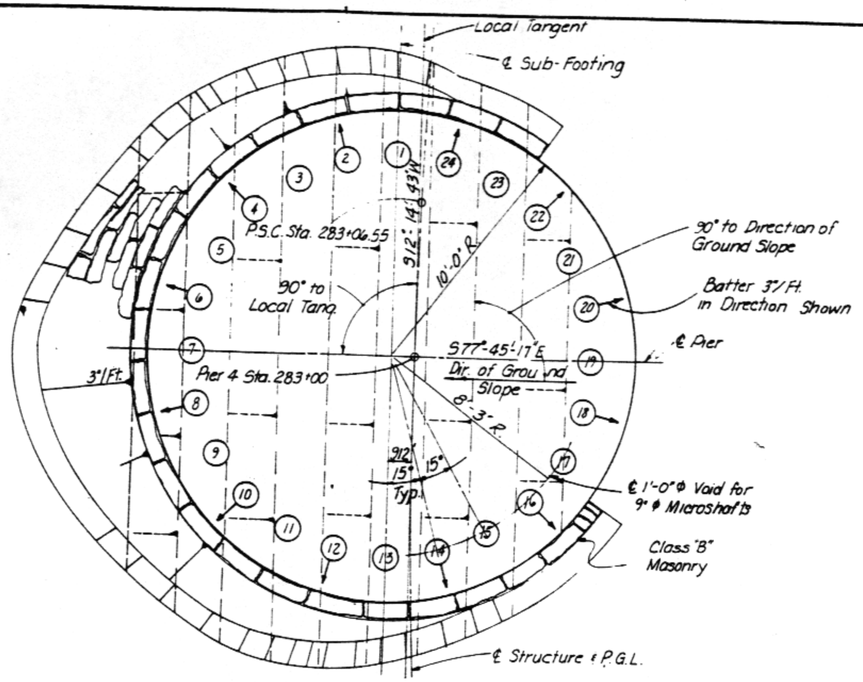
Special Consultant: JEAN M. MULLER — TALLAHASSEE, FL

REVISIONS			
No.	Descriptions		

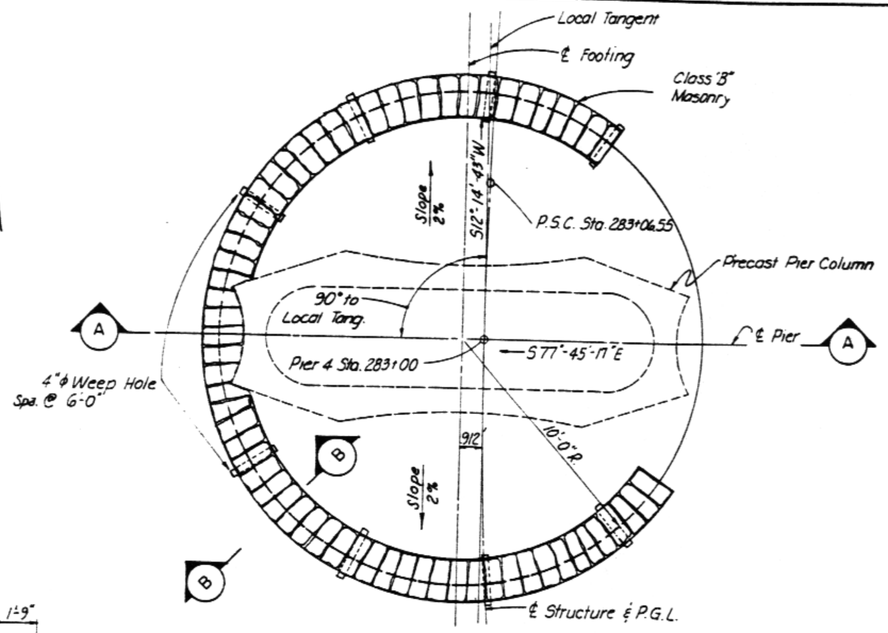
	Names	Dates	APPROVED BY
Designed by	B.t.B	4/78	
Checked by	Y.G.	7/78	
Quantities by			
Checked by			
Supervised by	D.D		

Drawing No. 5 — Project No.

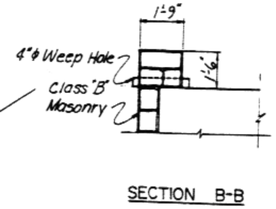
REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	N.C.	BR2H7	39	164



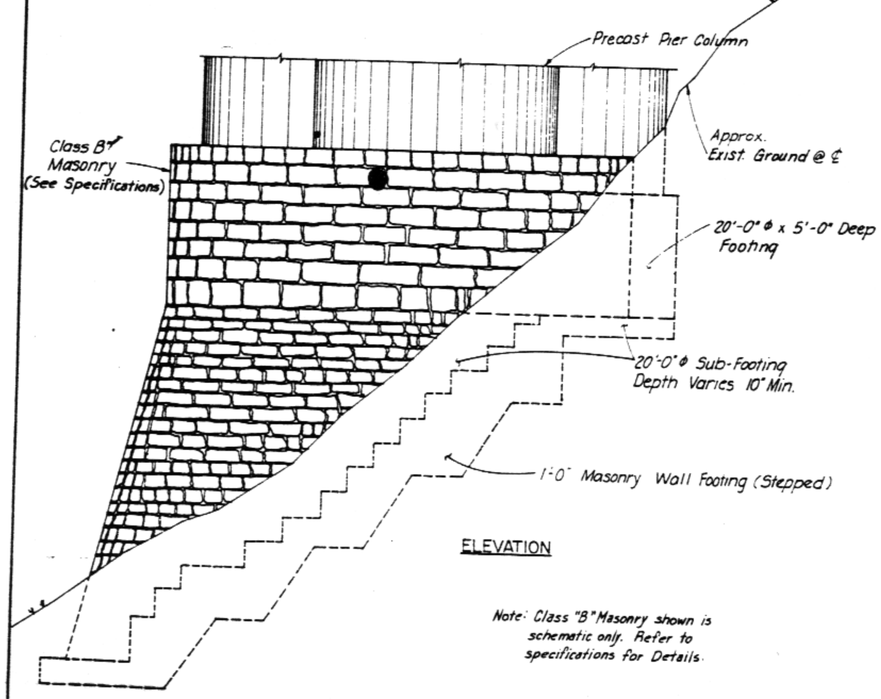
SUB-FOOTING PLAN



FOOTING PLAN

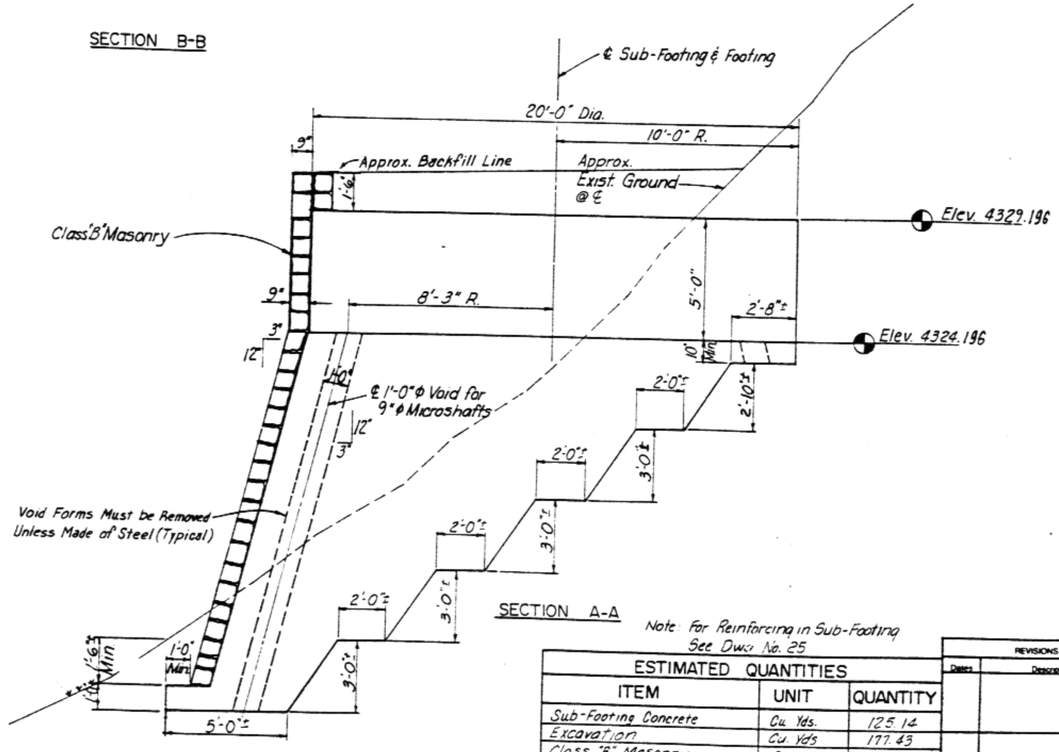


SECTION B-B



ELEVATION

Note: Class "B" Masonry shown is schematic only. Refer to specifications for Details.



SECTION A-A

Note: For Reinforcing in Sub-Footing See Dwg. No. 25

NOTES:

THE EXISTING GROUND LINES SHOWN ARE APPROXIMATE AND MAY VARY WITH ACTUAL FIELD CONDITIONS. ADDITIONALLY, ROCKS OR BOULDERS MAY PROTRUDE INTO THE CONCRETE SUB-FOOTING, PROVIDED THE MINIMUM DIMENSIONS OF SUB-FOOTING CONCRETE ARE AS SHOWN.

THE ESTIMATED QUANTITIES FOR THE MATERIALS SHOWN ON THIS DRAWING ARE BASED ON THE PLANS AND DETAILS AS DRAWN.

THE AMOUNT AND COST OF FORMED VOIDS REQUIRED TO CONSTRUCT THE SUB-FOOTING SHALL BE INCLUDED IN THE COST OF SUB-FOOTING CONCRETE.

STABILIZATION MICROSHAFTS SHALL BE PLACED PRIOR TO CONSTRUCTION OF SUBFOOTING. (SEE DRAWING NO. 23A)

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Sub-Footing Concrete	Cu. Yds.	125.14
Excavation	Cu. Yds.	177.43
Class "B" Masonry	Cu. Yds.	24.87

REVISIONS	
Dates	Descriptions

PIER 4
SUB FOOTING & FOOTING LAYOUT

Scale : 1" = 3'-0"

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

LINN COVE VIADUCT

BARRETT DAFFIN & FIGG / EUROPE ETUDES
Special Consultant: JEAN M. MULLER TALLAHASSEE, FL

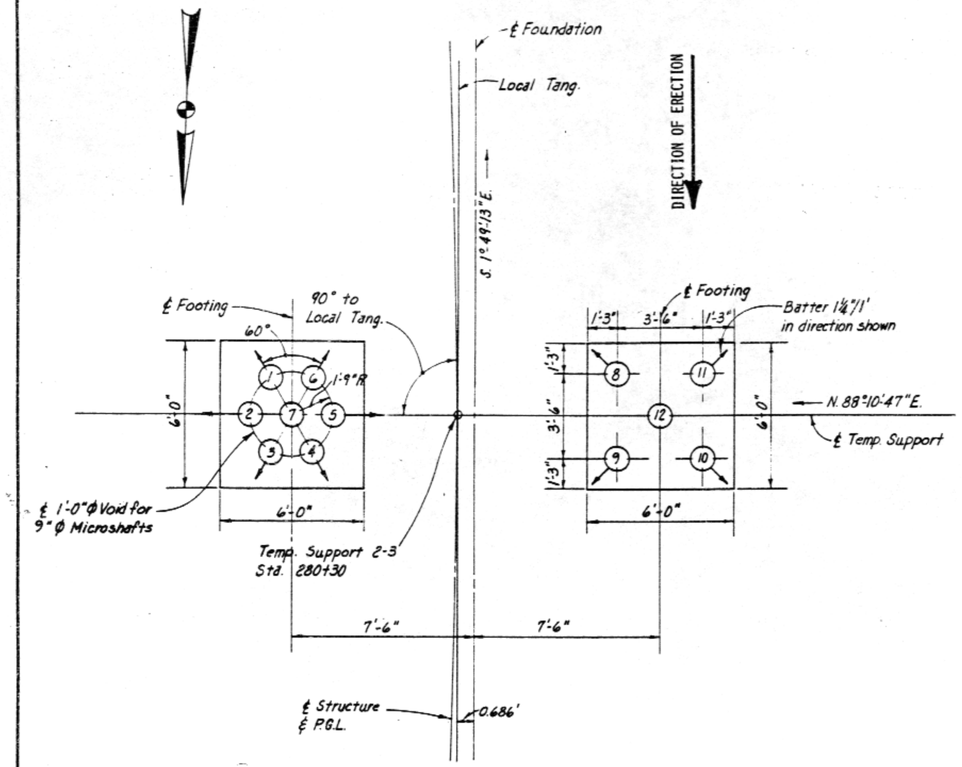
	Names	Dates
Designed by	B. E. B.	7-78
Checked by	Y.G.	7-78
Quantities by		
Checked by		
Supervised by	D. D.	

APPROVED BY

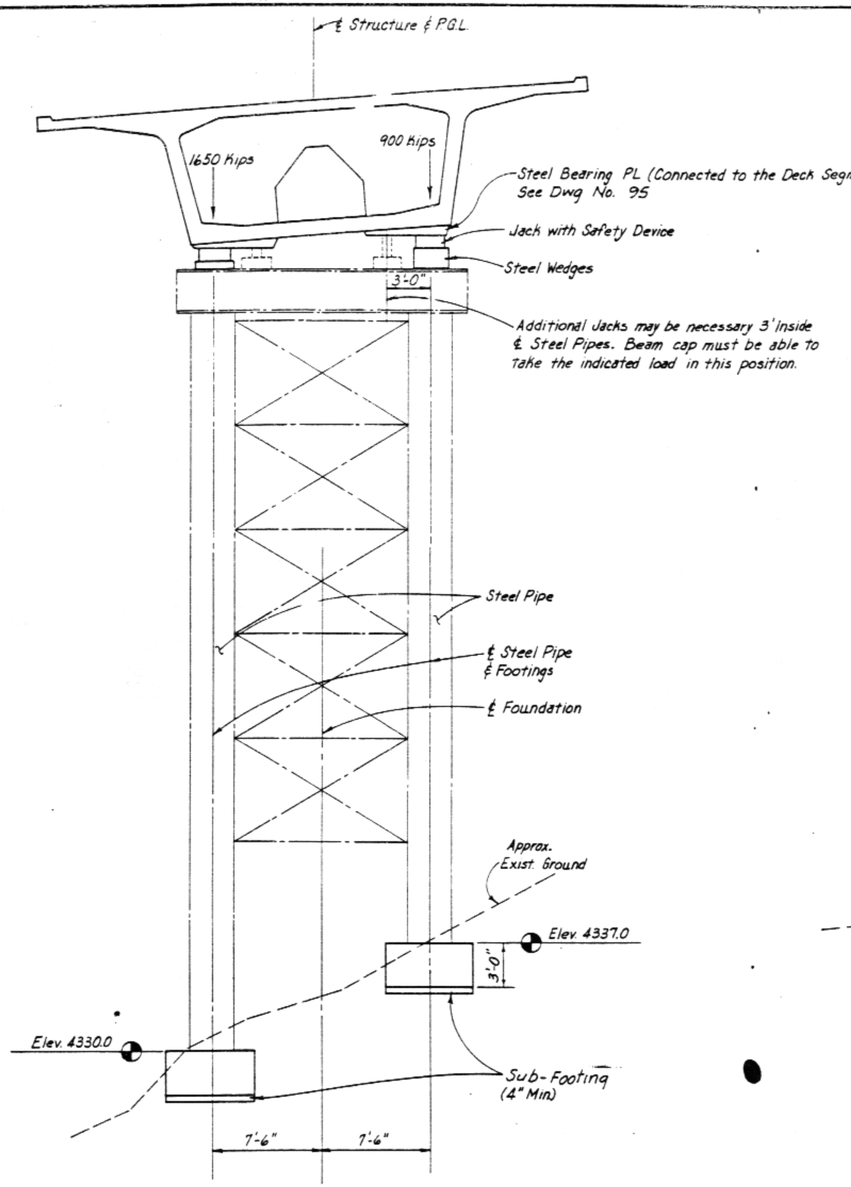
Drawing No. 23

Project No.

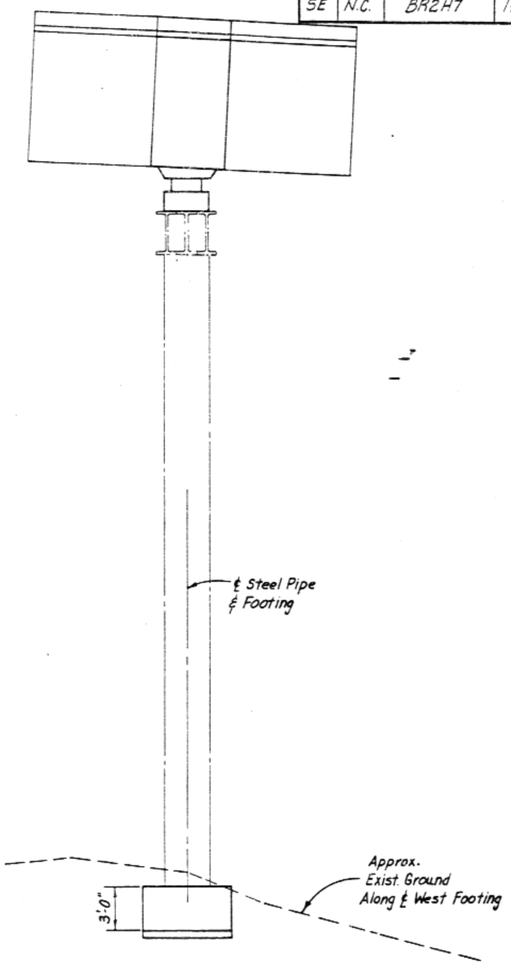
REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	N.C.	BR2H7	113	164



PLAN
Scale: 1"=3'-0"

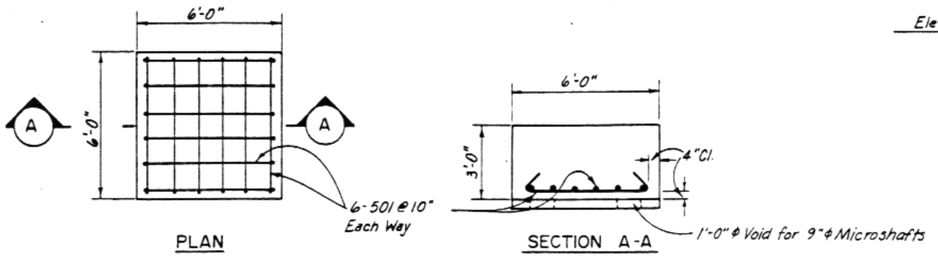


ELEVATION
Scale: 1"=5'-0"



WEST ELEVATION
Scale: 1"=5'-0"

Note:
This frame is schematic only and the design of the frame is the contractor's responsibility.

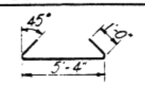


FOOTING REINFORCING
Scale: 1"=3'-0"

TEMPORARY SUPPORT 2-3

BILL OF REINFORCING				
MARK	NO.	LENGTH	BENT	STR.
501	24	7'-4"	•	

BENDING DIAGRAMS



ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Concrete A(AE)	Cu. Yds.	8.00
Reinforcing Steel	Lbs.	184
Sub-Footing Concrete B	Cu. Yds.	0.77
Excavation	Cu. Yds.	10.89

NOTE:
THE ESTIMATED QUANTITIES ARE FOR THE CONTRACTOR'S INFORMATION ONLY. THE COST OF ALL THE CONCRETE, REINFORCING STEEL AND MISCELLANEOUS ITEMS IN THE FOOTINGS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR TEMPORARY SUPPORTS (SEE SPECIAL PROVISIONS).

REVISIONS	
Dates	Descriptions

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

LINN COVE VIADUCT

BARRETT DAFFIN & FIGG / EUROPE ETUDES
Special Consultant: JEAN M. MULLER — TALLAHASSEE, FL

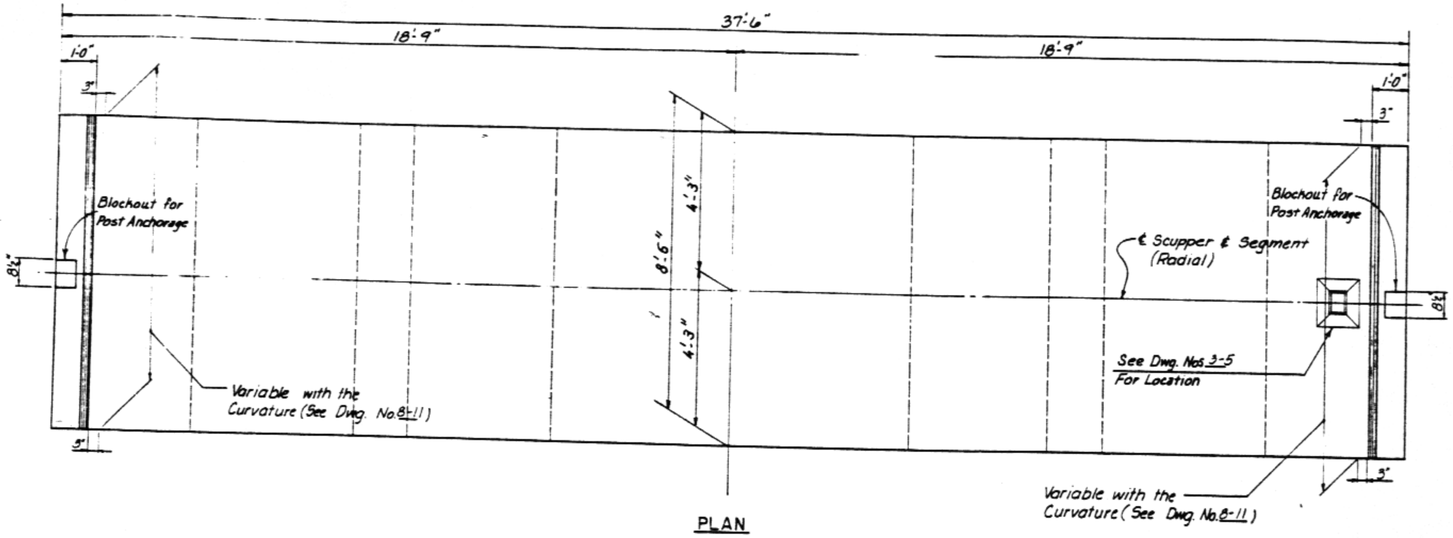
	Names	Dates
Designed by	W. L	7-78
Checked by	Y. G	7-78
Quantities by	B.E.B	7-78
Checked by	Y. G	7-78
Supervised by	D.D	

APPROVED BY

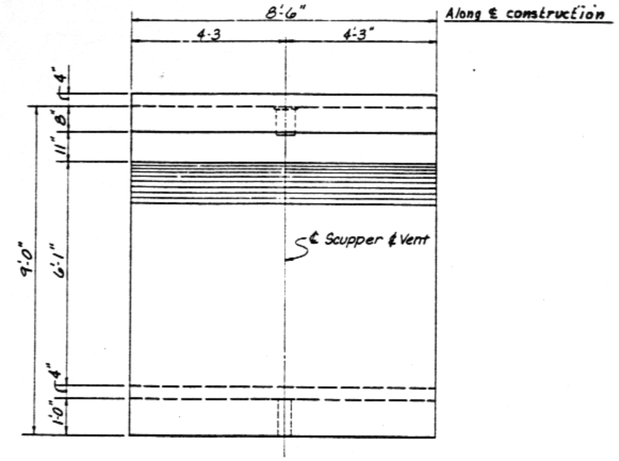
Drawing No. 96

Project No.

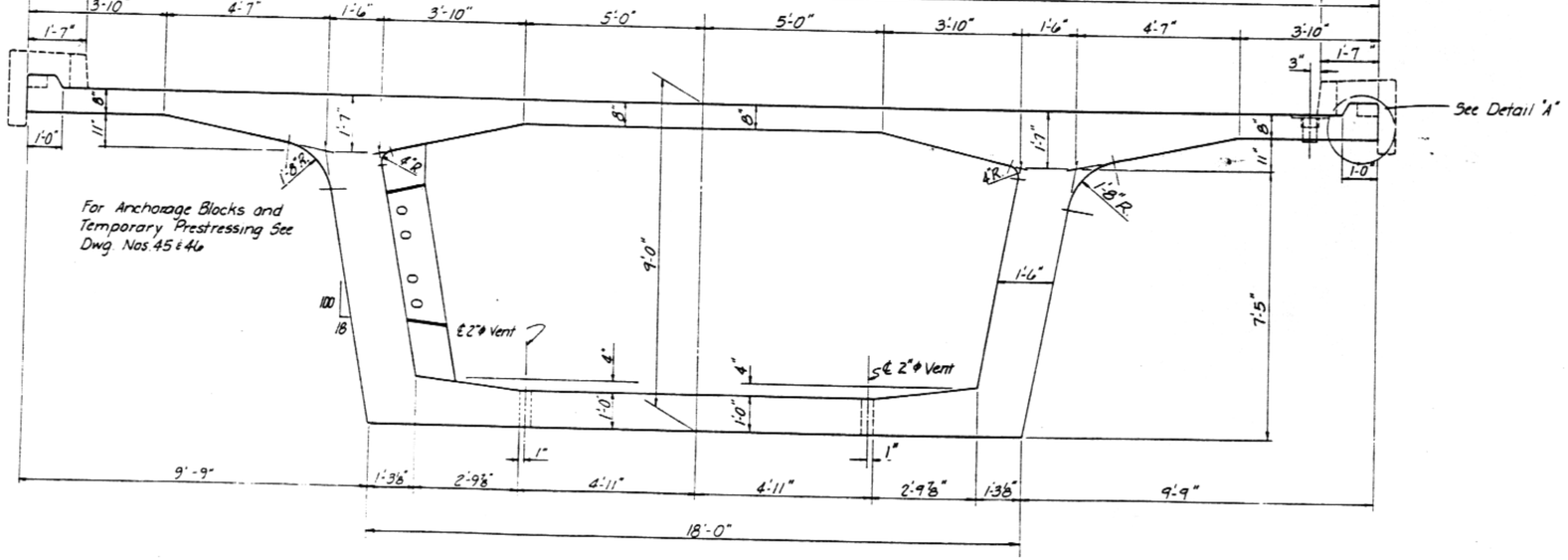
REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	N.C.	BR2H7	56	164



PLAN

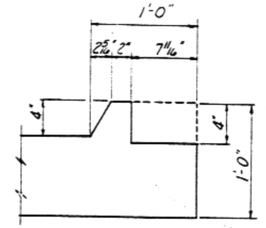


SIDE ELEVATION



HALF SECTION AT POST-TENSIONING BLOCK

TYPICAL HALF SECTION THRU SEGMENT



DETAIL "A"
(Typical for all Segments)

TYPICAL SEGMENT

Scale: ½" = 1'-0"

REVISIONS	
Dates	Descriptions

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

LINN COVE VIADUCT

BARRETT DAFFIN & FIGG / EUROPE ETUDES

Special Consultant: JEAN M. MULLER — TALLAHASSEE, FL

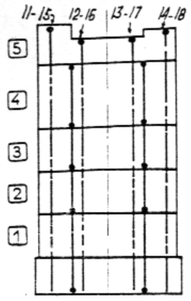
	Names	Dates
Designed by	JR	5/78
Checked by	Y.G	7/78
Quantities by		
Checked by		
Supervised by	DD	

APPROVED BY

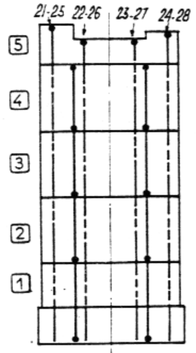
Drawing No. 39

Project No.

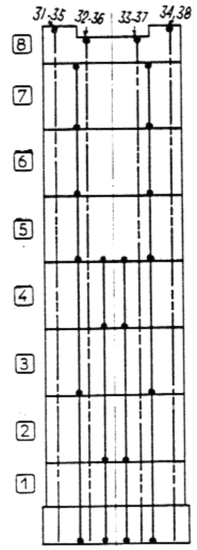
REG.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	NC	BR2H7	119	164



P 1



P 2



P 3

PIER NO. 1 ERECTION.

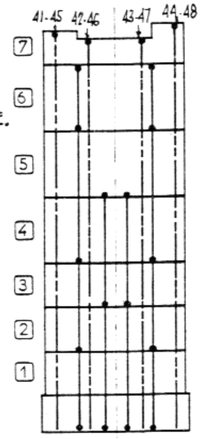
1. PLACE THE REINFORCING STEEL OF THE FOOTING.
2. INSTALL BOTTOM SEGMENT NO. 1 (SEE DETAIL).
3. PLACE POST TENSIONING STEEL ANCHORAGES AND DUCTS, CONNECT THEM WITH THE DUCTS EMBEDDED IN THE PRECAST SEGMENT NO. 1.
4. POUR THE CONCRETE OF THE FOOTING, EPOXY INJECT JOINT BETWEEN PRECAST AND POURED IN PLACE CONCRETE.
5. SEGMENT NO. 2 MAY BE INSTALLED AFTER THE CONCRETE OF THE FOOTING AND THE EPOXY HAVE REACHED A 2500 PSI COMPRESSIVE STRENGTH.
6 - ASSEMBLE SEGMENT NO. 2 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 1
7 - ASSEMBLE SEGMENT NO. 3 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 2
8 - ASSEMBLE SEGMENT NO. 4 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 3
9 - SEAL AND GROUT ALL THE VERTICAL POST TENSIONING BARS.
10 - ASSEMBLE TOP SEGMENT NO. 5 .
11 - THREAD TENDONS 12 X 1/2" STRANDS.
12 - STRESS FROM THE TOP TENDONS NO. (12 ℄ 17)(13 ℄ 16)(11 ℄ 18)(14 ℄ 15) IN THE SEQUENCE NOTED
13 - SEAL AND GROUT TENDONS 12 X 1/2" STRANDS.

PIER NO. 2 ERECTION.

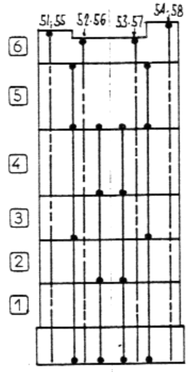
1 THRU 5: AS PIER NO. 1 ERECTION
6 - ASSEMBLE SEGMENT NO. 2 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 1
7 - ASSEMBLE SEGMENT NO. 3 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 2
8 - ASSEMBLE SEGMENT NO. 4 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 3
9 - SEAL AND GROUT ALL THE VERTICAL POST TENSIONING BARS.
10 - ASSEMBLE TOP SEGMENT NO. 5 .
11 - THREAD TENDONS 12 X 1/2" STRANDS.
12 - STRESS FROM THE TOP TENDONS NO. (22 ℄ 27)(23 ℄ 26)(21 ℄ 28)(24 ℄ 25)
13 - SEAL AND GROUT TENDONS 12 X 1/2" STRANDS.

PIER NO. 3 ERECTION.

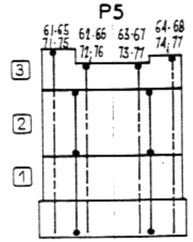
1 THRU 5: AS PIER NO. 1 ERECTION
6 - ASSEMBLE SEGMENT NO. 2 BY STRESSING BARS A
7 - ASSEMBLE SEGMENT NO. 3 BY STRESSING BARS B COUPLED WITH BARS B OF SEGMENT NO. 1
8 - ASSEMBLE SEGMENT NO. 4 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 2 AND BARS B COUPLED WITH BARS B OF SEGMENT NO. 3
9 - ASSEMBLE SEGMENT NO. 5 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 4
10 - ASSEMBLE SEGMENT NO. 6 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 5
11 - ASSEMBLE SEGMENT NO. 7 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 6
12 - SEAL AND GROUT ALL THE VERTICAL POST TENSIONING BARS.
13 - ASSEMBLE TOP SEGMENT NO. 8 .
14 - THREAD TENDONS 12 X 1/2" STRANDS.
15 - STRESS FROM THE TOP TENDONS NO. (32 ℄ 37)(33 ℄ 36)(31 ℄ 38)(34 ℄ 35)
16 - SEAL AND GROUT TENDONS 12 X 1/2" STRANDS.



P 4



P 5



P 6
P 7

PIER NO. 4 ERECTION.

1 THRU 5: AS PIER NO. 1 ERECTION
6 - ASSEMBLE SEGMENT NO. 2 BY STRESSING BARS B
7 - ASSEMBLE SEGMENT NO. 3 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 1
8 - ASSEMBLE SEGMENT NO. 4 BY STRESSING BARS B COUPLED WITH BARS B OF SEGMENT NO. 2
9 - ASSEMBLE SEGMENT NO. 5 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 3
10 - ASSEMBLE SEGMENT NO. 6 BY STRESSING BARS B COUPLED WITH BARS B OF SEGMENT NO. 4
11 - SEAL AND GROUT ALL THE VERTICAL POST TENSIONING BARS.
12 - ASSEMBLE TOP SEGMENT NO. 7 .
13 - THREAD TENDONS 12 X 1/2" STRANDS.
14 - STRESS FROM THE TOP TENDONS NO. (42 ℄ 47)(43 ℄ 46)(41 ℄ 48)(44 ℄ 45)
15 - SEAL AND GROUT TENDONS 12 X 1/2" STRANDS.

PIER NO. 5 ERECTION.

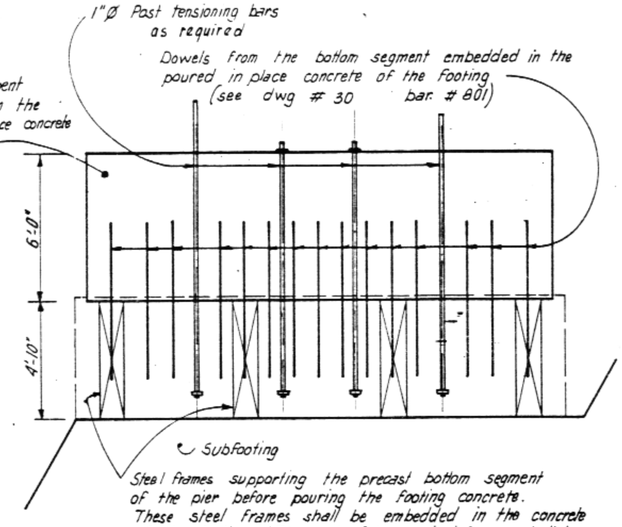
1 THRU 5: AS PIER NO. 1 ERECTION
6 - ASSEMBLE SEGMENT NO. 2 BY STRESSING BARS A
7 - ASSEMBLE SEGMENT NO. 3 BY STRESSING BARS B COUPLED WITH BARS B OF SEGMENT NO. 1
8 - ASSEMBLE SEGMENT NO. 4 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 2 AND BARS B COUPLED WITH BARS B OF SEGMENT NO. 3
9 - ASSEMBLE SEGMENT NO. 5 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 4
10 - SEAL AND GROUT ALL THE VERTICAL POST TENSIONING BARS.
11 - ASSEMBLE TOP SEGMENT NO. 6 .
12 - THREAD TENDONS 12 X 1/2" STRANDS.
13 - STRESS FROM THE TOP TENDONS NO. (52 ℄ 57)(53 ℄ 56)(51 ℄ 58)(54 ℄ 55)
14 - SEAL AND GROUT TENDONS 12 X 1/2" STRANDS.

PIER NO. 6-7 ERECTION.

1 THRU 5: AS PIER NO. 1 ERECTION
6 - ASSEMBLE SEGMENT NO. 2 BY STRESSING BARS A COUPLED WITH BARS A OF SEGMENT NO. 1
7 - SEAL AND GROUT ALL THE VERTICAL POST TENSIONING BARS.
8 - ASSEMBLE TOP SEGMENT NO. .
9 - THREAD TENDONS 12 X 1/2" STRANDS.
10 - STRESS FROM THE TOP TENDONS NO. (62 ℄ 67)(63 ℄ 66)(61 ℄ 68)(64 ℄ 65) PIER 6
(72 ℄ 77)(73 ℄ 76)(71 ℄ 78)(74 ℄ 75) PIER 7
11 - SEAL AND GROUT TENDONS 12 X 1/2" STRANDS.

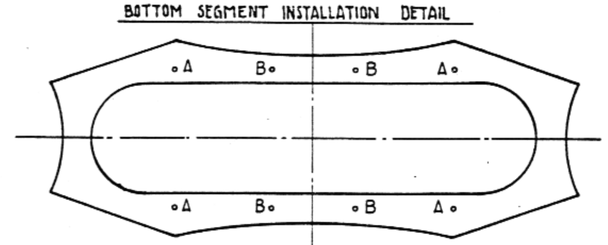
TENDONS 12 X 1/2" STRANDS : JACKING FORCE : 372 KIPS
ASSUMED ANCHOR SET (DRAW IN) = 0.38"
1"ø BARS : JACKING FORCE : 99 KIPS

NOTE : The temporary post tensioning shall not be measured and paid for directly; it will be considered a subsidiary obligation of the contract



Steel frames supporting the precast bottom segment of the pier before pouring the footing concrete. These steel frames shall be embedded in the concrete of the footing (The cost of these steel frames shall be included in the contract unit price for the precast bottom segment of the piers)

BOTTOM SEGMENT INSTALLATION DETAIL



VERTICAL 1"ø POST TENSIONING BARS LOCATION

CONSTRUCTION NOTES
PIERS 1 THRU 7

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

LINN COVE VIADUCT

BARRETT DAFFIN & FIGG / EUROPE ETUDES
Special Consultant: JEAN M. MULLER TALLAHASSEE, FL

REVISIONS					
Dates	Descriptions				

	Names	Dates	APPROVED BY
Designed by	R M	7 12 78	
Checked by	J G	7 27 78	
Quantities by			
Checked by			
Supervised by	D D		

Drawing No. 102 | Project No.